NATIONAL FLOOD INSURANCE PROGRAM

Actuarial Rate Review

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Purpose of This Document

An annual review of the National Flood Insurance Program (NFIP) underwriting experience, with accompanying Program revisions, is an integral part of maintaining the Program's goal of a fiscally sound rating and coverage structure. The purpose of this document is to share the results of the latest actuarial review of the rating structure in the context of the history and goals of the Program.

Overview

Floods have been, and continue to be, the nation's most destructive natural hazard in terms of economic loss. Since the inception of the Program in 1968, the Federal Government has had to assume a major financial role in easing the impact of flood damage on individuals and communities. Studies indicate that, although insurance does not and probably cannot respond to all the needs of disaster victims, insurance is the most efficient and equitable method of providing disaster assistance (GAO Report, PAD-80-39). As a result, the U.S. Congress established the National Flood Insurance Program (NFIP) with the passage of the National Flood Insurance Act of 1968. The NFIP provides the means by which flood insurance is made available through the cooperative efforts of the Federal Government and the private insurance industry.

The NFIP is part of a coordinated, three-pronged approach developed to (i) identify those areas within local communities that are most at risk of flooding, (ii) minimize the economic impact of flooding events through a combination of mitigation efforts and floodplain ordinances, and (iii) make flood insurance available to help individuals and small businesses recover following a flood. The NFIP can provide the flexibility for flood insurance to be based on workable methods of pooling risks, minimizing costs, distributing burdens equitably among those protected by flood insurance and the general public, and structuring rates to support mitigation and floodplain ordinance efforts.

A Brief History of the NFIP

The National Flood Insurance Act of 1968 created the NFIP, which since 1979 has been part of the Federal Emergency Management Agency (FEMA). In March 2003, FEMA became part of the newly created U.S. Department of Homeland Security (DHS). Within FEMA, the NFIP has been historically administered by the Federal Insurance Administration, which has

been more recently consolidated with other operations of FEMA and renamed the Mitigation Division.

The basic structure of the NFIP was established by the 1968 Act, and that structure continues today. The NFIP is a Federal program enabling property owners in participating communities to purchase insurance as a protection against flood losses in exchange for State and community floodplain management regulations that reduce future flood damages. Participation in the NFIP is based on an agreement between communities and the Federal Government. Flood insurance is made available within a community when it adopts and enforces a floodplain management ordinance to reduce future flood risk to new construction in floodplains.

To encourage participation in the NFIP, the Flood Disaster Protection Act of 1973 expanded the authority of FEMA to grant premium subsidies as an additional incentive to encourage widespread state, community, and property owner acceptance of program requirements. For the next 7 years, the heavily subsidized premium charges remained in effect. During that period, nearly every community with a flood hazard joined the NFIP, and the insurance policy count increased dramatically, reaching 2 million by 1979. States also responded: governors appointed floodplain management coordinators to assist local communities' governments in working with FEMA on Program matters. These actions resulted in establishing, for the first time, a nationwide response to address the flood peril.

In 1981, with the NFIP firmly established, FEMA initiated rating and coverage changes through the mid-1980s that placed the Program on a fiscally sound basis with significantly less subsidy being provided. In establishing a fiscally sound program, which was achieved in 1988, FEMA has stressed that, as opposed to the traditional insurance definition of fiscal solvency, the NFIP's intent is to generate premium at least sufficient to cover expenses and losses relative to what is called the "historical average loss year."[1]

The National Flood Insurance Reform Act of 1994 reinforced the objective of using insurance as the preferred mechanism for disaster assistance by expanding mandatory flood insurance purchase requirements and by effecting a prohibition on further flood disaster assistance for any property where flood insurance, after having been mandated as a condition for receiving disaster assistance, is not maintained. These measures were added in recognition of the fact that loan or grant programs, to the extent that they parallel the insurance mechanism, can undermine the ability of the insurance program to operate efficiently and equitably.

In June 2004, Congress passed and the President signed the Bunning-Bereuter-Blumenauer Flood Insurance Reform Act (FIRA) of 2004. The Act provides additional tools for addressing the impact of repetitive loss properties on the National Flood Insurance Fund. It introduces a pilot project through Fiscal Year 2009 that (1) defines severe repetitive loss

[1]This concept of targeting premium levels to the "historical average loss year" is explained in more detail in the section entitled "Premium Structure" on page 4.

properties, (2) authorizes additional funds for mitigation projects, and (3) mandates a 50% increase in premiums for property owners who decline a mitigation offer, along with an appeal process. It also modifies the Flood Mitigation Assistance (FMA) Program by doubling the annual authorized funding level to $40 million and directing it to give priority to those properties that are in the best interest of the National Flood Insurance Fund, and introduces a new Individual Priority Property Program that authorizes up to $10 million annually for FEMA to address those previously flooded properties that the State and local community do not have the capacity to manage themselves. The Act also expands ICC coverage so that, even when there has not been a recent flood loss, it can be applied to the non-Federal cost-share requirement of FEMA-funded mitigation projects for individual structures.

Title II of FIRA 2004 seeks to increase policyholder understanding of the policy's provisions and consumer rights under the NFIP. This will help to address concerns raised in the aftermath of Hurricane Isabel.

Financial Structure of the NFIP

Borrowing Authority

The Program has not been capitalized and pays losses and operating expenses out of policyholder premiums. The result is that during less-than-average-loss years the Program generates surplus, while during higher loss years that accumulated surplus is used to pay the amount by which insured flood losses exceed that year's net premium revenue. The NFIP has borrowing authority with the U.S. Treasury to cover losses in the event that policyholder funds and investment income are inadequate. Initially, the NFIP was granted a $1 billion borrowing authority, but in 1996 legislation was passed (and subsequently extended) providing an increase in borrowing authority from $1 billion to $1.5 billion in order to provide a greater cushion against potential losses.

As of the end of FY 2004, the National Flood Insurance Fund had a positive balance of just over $1.1 billion, which is expected to be sufficient to pay the outstanding claims from Hurricanes Charley, Ivan, Frances, and Jeanne, which occurred during August and September 2004. During the last decade, however, the NFIP has exercised its borrowing authority three times. Following the Midwest Flood of 1993, the Program borrowed $11 million, which was quickly repaid. The Program borrowed again as a result of the heavy flood losses during 1995 and 1996 that were at twice the historical average. That borrowing peaked at $922 million during FY 1998, but was completely repaid by June 2001. However, Tropical Storm Allison (June 2001)—the first $1 billion storm in the history of the NFIP—required the Program to borrow $650 million. That amount was repaid as of October 31, 2002.

Operating Expenses

From 1987 through 1992, the Congress, rather than appropriating tax dollars for Federal staff salaries and the costs of flood studies and floodplain management as had been done previously, instead transferred policyholder premiums to salary and expense accounts and

the emergency management program accounts of the Federal Emergency Management Agency (FEMA). These expenses were not authorized to be included in the insurance premium charges. The current value of this transfer and the resulting loss of investment income and increased borrowing is effectively a reduction in loss reserves in the National Flood Insurance Fund of about $597 million. This has made the fund more vulnerable to the need for exercising the NFIP's statutory borrowing authority in order to cover losses arising out of a large flood event.

FEMA believes that most of the salary, study, and floodplain management costs delineated above in the discussion of fund transfers are Federal in nature and benefit taxpayers as a whole through programs that reduce future flood losses and resultant Federal expenditures. However, the Congress legislated, with the Budget Reconciliation Act of 1990, that the full funding of these expenses would be borne by flood insurance policyholders through a Federal Policy Fee. To keep this charge as low as possible, the legislation specifically states that the fee is not subject to agent commissions, company expense allowances, or State or local premium taxes. Therefore, although in this rate review the Federal Policy Fee is included in exhibits and analyses of rate level indications, for accounting and Write Your Own (WYO) company reporting purposes, the fee is not considered to be premium.

Premium Structure

In establishing a fiscally sound program, which was achieved in 1988, FEMA has stressed that, as opposed to the traditional insurance definition of fiscal solvency, the NFIP's intent is to generate premium at least sufficient to cover expenses and losses relative to what is called the "historical average loss year." The underwriting experience period has, to date, included 7 heavy-loss years[2]. Despite these heavy-loss years, the absence of extremely rare but very catastrophic loss years leads to the conclusion that the historical average is less than what can be expected over the long term. The establishment of this target level of premium income for the Program as a whole accommodates the combined effect of the portion of NFIP business paying less-than-full-risk premiums (a subsidy provided by statute) and the portion of the business paying full-risk premiums that contemplate in their rates the full range of loss potential including catastrophic levels. The distribution of business written in 2005 is anticipated to be 26% at subsidized rates[3] and 74% at full-risk premium rates. FEMA estimates that, were the catastrophic contingency contemplated in establishing all

[2]These 7 loss years are 1979 (Hurricane Frederic), 1983 (Hurricane Gloria), 1989 (Hurricane Hugo), 1992 (Hurricanes Andrew and Iniki), 1993 (the Midwest Flood), 1995 (the May New Orleans Flood and a smaller Mississippi Flood), and 2001 (Tropical Storm Allison). In addition, although this year's rate review was based on underwriting experience through December 31, 2003, calendar year 2004 promises to be a heavy loss-year due to the many hurricanes that made landfall (Hurricanes Charley, Frances, Ivan, and Jeanne).

[3]This estimate of 26% is composed of 24% Pre-FIRM and 2% other categories. For a more complete discussion of the various subsidized rates categories, see the "Ratemaking" section on pages 6-9.

rate levels, the Pre-FIRM[4] subsidized portion of the business would have to pay about two and a half times the current premium, and the overall target level for premiums would have to increase on the order of 50% to 75%.

The most recent changes were effected on May 1, 2004. These resulted in an average rate increase of 0.1% for actuarially rated policies and 5.1% for subsidized policies, with the average Program-wide rate increase being 2.2%. The largest increases (5% to 8%) were in the Pre- and Post-FIRM V Zones. Significant changes to the Preferred Risk Policy (PRP) were also introduced: (1) It was expanded to include Non-Residential and Other Residential policyholders; (2) a contents-only version of the PRP was introduced; and (3) the amount of contents coverage for existing policies was increased so that, for the first time, PRP policyholders can purchase maximum program limits for both their building and contents.

This year's *Actuarial Rate Review* recommends that the actuarial based rates increase 2.3% and the subsidized rates increase 0.3%, corresponding to an overall premium increase of 1.4%. A breakdown of the proposed rate increases by category is shown in Exhibit A. The largest of these increases are in standard policies in B, C, and X Zones and AR Zone. No change in rates is recommended for policies in the Pre- and Post-FIRM V Zones. These are the recommended changes to be effective May 1, 2005; unlike more recent Rate and Rule changes, no rule changes are being proposed to accompany these rate changes.

Impact of Other Public Policy Objectives on the NFIP

The Program's financial status must be addressed in a context that is broader than the focus of this rate review. While low loss experience can provide opportunities to rebuild surplus from policyholder premiums, other measures and public policy issues must also be explored. For example, the passage of the Flood Insurance Reform Act of 2004 provides several tools for mitigating repetitive loss properties. These properties are primarily Pre-FIRM, and the premiums they are currently charged are some of the most heavily discounted relative to their full-risk premiums. Once the provisions of FIRA 2004 are implemented and the number of repetitive loss properties is reduced, one benefit will be a reduction in the NFIP's level of subsidy.

Other public policy objectives that have a bearing on the Program's financial status must be accommodated by the NFIP. It is sound public policy to maximize the number of people who have flood insurance, so as to lessen the reliance on disaster assistance. In recent years, policyholder growth has been only 1% to 2%. This slower policy growth is not due to a lack of new business, but to a high non-renewal or lapse rate. To increase this growth rate, the NFIP is undertaking a new marketing campaign that, while continuing to market to new

[4]A "FIRM" is a Flood Insurance Rate Map, an official map of a community on which FEMA has delineated both the Special Flood Hazard Areas (SFHAs) and the risk premium zones applicable to the community. "Pre-FIRM" pertains to a building for which construction or substantial improvement occurred on or before December 31, 1974, or before the effective date of an initial FIRM.

customers, will also focus on retaining existing policyholders and attracting back those individuals who previously had flood insurance.

Although the growth in policyholders has slowed during recent years, average amounts of insurance continue to increase, which increases the potential dollar amounts borrowed, even if those amounts are small relative to overall premium volume. And apart from the Pre-FIRM subsidy, it is public policy to encourage the purchase of flood insurance in areas that are known to be experiencing temporary conditions of heightened flood risk, although a 30-day waiting period reduces some of the effects of this adverse selection.

The possibility of borrowing funds would be present even if all NFIP policyholders paid full-risk premiums. Twenty-six percent of policyholders paying significantly less than full-risk premiums impedes the NFIP's ability to generate surplus or to repay borrowed funds, which depends on levels of annual losses that are highly variable. Funding of the Program from policyholder income or potentially from other sources must be addressed in the context of the long-term governmental goals for the NFIP, including its substitution for disaster relief and its encouragement of floodplain management. Subsidized insurance for older construction, built to lower standards in regard to the flood risk and for which full-risk premiums could be unreasonably high, was the quid pro quo for local community adoption of ordinances controlling new construction in the floodplain. It is also a means by which owners of older construction can prefund at least part of their disaster recovery. The NFIP's standards for new construction are now saving an estimated $1.1 billion annually in flood damage avoided. Additionally, it should be recognized that, in fiscal years 1986 through 2004, the NFIP paid out, from policyholder funding, about $11.0 billion in insurance claims, which otherwise would have greatly increased taxpayer-funded disaster relief.

Ratemaking

Generally accepted actuarial principles require at a minimum that a rating system provide protection against the economic uncertainty associated with chance occurrences by exchanging the uncertainty for a predetermined price. This price for insuring the uncertain event must:

- Protect the insurance system's financial soundness;
- Be fair; and
- Permit economic incentives to operate and thus encourage widespread availability of coverage.

For the purpose of setting prices, the broad grouping of risks with similar characteristics is a fundamental precept of a financially sound and equitable system. Because each property at risk is different, a rating system that attempts to identify and reflect in prices every risk characteristic is usually unworkable and costly. The basic features that must be present in sound risk groupings in order to meet the above criteria are:

- The system should reflect cost and experience differences on the basis of relevant risk characteristics.
- The system should be applied objectively and consistently.
- The system should be practical, cost-effective, and responsive to change.
- The system should minimize anti-selection.
- The system should be acceptable to the public.

Also, in the case of flood insurance authorized under Public Law 90-448 (National Flood Insurance Act), the system of insurance and pricing must further the purposes of the Act, which include, among other things, to "(1) encourage State and local governments to make appropriate land use adjustments to constrict the development of land that is exposed to flood damage caused by flood losses, and (2) guide the development of proposed further construction, where practicable [emphasis added], away from locations that are threatened by flood hazards." In order to give practical meaning to these objectives, the standard of a 1% annual chance of flood is now used by virtually all Federal, State, and local agencies and participating communities in the administration of floodplain management programs. The risk of experiencing a flood of this magnitude or larger is one chance in four during a typical 30-year mortgage period. In terms of flood insurance, this standard yields reasonably priced insurance protection to the property owner.

The use of a lesser standard approximating pre-1969 building practices would expose future risks to a better than 50% chance of being flood damaged during a 30-year mortgage period and result in insurance rates three to four times those reflecting the "1% annual chance of flood" standard. It was just this consideration of unaffordable full-risk premium (actuarial) rates that prompted Congress to "grandfather" existing construction at subsidized rates.

The National Flood Insurance Act of 1968 separated the flood insurance ratemaking process into two distinct categories, namely, chargeable premium (subsidized) rates and estimated-risk premium (actuarial) rates.

Subsidized Rates

These are countrywide rates by broad occupancy type classifications, which produce a premium income less than the expense and loss payments incurred for the flood insurance policies issued on that basis. The funds needed to supplement the inadequate premium income are provided by the National Flood Insurance Fund.

Pre-FIRM Subsidized Rates

FEMA has promulgated subsidized rates for use in two cases. The first case is for the Emergency Program (added to the NFIP in 1970). Subsidized rates are also used in the Regular Program on construction or substantial improvement started on or before either

December 31, 1974[5], or the effective date of the initial FIRM, whichever is later. Exhibit E details the relationship between the amount of subsidized premium to be collected and the amount of premium required to fund the historical average loss year. The Pre-FIRM properties that pay less than full-risk premium are estimated to pay between 35% and 40% of the full-risk premium needed to fund the long-term expectation for losses.

Special Post-FIRM Classes That Are Subsidized

There are three other cases where classes of business are being subsidized either statutorily or by agreement with Congressional oversight committees.

The first of these is the class of risks located in Zone A99 areas that are subject to the 1% annual chance flood but for which structural protection that will protect to that level is at least 50% completed. By statute, rates are charged as if that protection were already in place.

A second case, added by statute in 1998, is the class of risks located in Zone AR areas. These are areas for which structural measures have been decertified as no longer providing protection to the "1% annual chance of flood" standard. If the areas meet certain criteria pertaining to a scheduled restoration of protection levels, then rates for new and existing construction are capped at the Pre-FIRM subsidized level. After careful consideration of several public policy issues, FEMA set the initial rates for AR Zones at levels equivalent to X Zone rates. Such rates are substantially lower than the cap allowed by statute.

The third case is the class of risks comprised of Post-FIRM construction in the V Zones built between 1975 and 1981. These buildings were built to NFIP standards that accounted for stillwater flood elevations but not the associated wave heights, which were not determinable by the engineering state-of-the-art of the time. In October 1981, the NFIP was able to make use of the latest engineering developments and began to require new construction to be built to more stringent standards and to charge rates that took into account the risks posed by the waves associated with the Base Flood[6]. Because the previously compliant construction would be subject to very high rates if held to the same new standards, discussions with Congressional oversight committee members led to the decision to "grandfather" the 1975-81 construction with less than the full-risk premium rates indicated by the latest knowledge of the risk.

Actuarial Rates

These rates are promulgated by FEMA for use under the Regular Program (the phase of the National Flood Insurance Program that a community may enter after the initial publication of the FIRM). The actuarial rates are applied in the rating of Post-FIRM construction and

[5]This additional "grandfathering" was added to the NFIP in 1973.

[6]The Base Flood is the flood associated with the Base Flood Elevation (BFE). In other words, there is a 1% chance in any given year that a flood will occur that equals or exceeds the Base Flood.

second layer limits of insurance on all construction (e.g., in the case of 1- to 4-family residences, amounts of insurance in excess of $35,000).

Actuarial rates are based on consideration of the risk involved and accepted actuarial principles. An overview of the actuarial rate calculations utilized in developing the indicated rates can be found in the Appendix. The formula described there follows in principle the "hydrologic method of estimating flood damage risk" outlined in the 1966 U.S. Department of Housing and Urban Development (HUD) report *Insurance and Other Programs for Financial Assistance to Flood Victims*.

There are a few risk zones (Zones A, B, C, D, AO, AH, X, and V) where costs to obtain the hydrologic and topographic information needed to develop flood magnitude and frequency relationships would be extremely high in relation to the floodplain management benefits. Average rates based on actuarial and engineering judgments and underwriting experience have been promulgated for these zones.

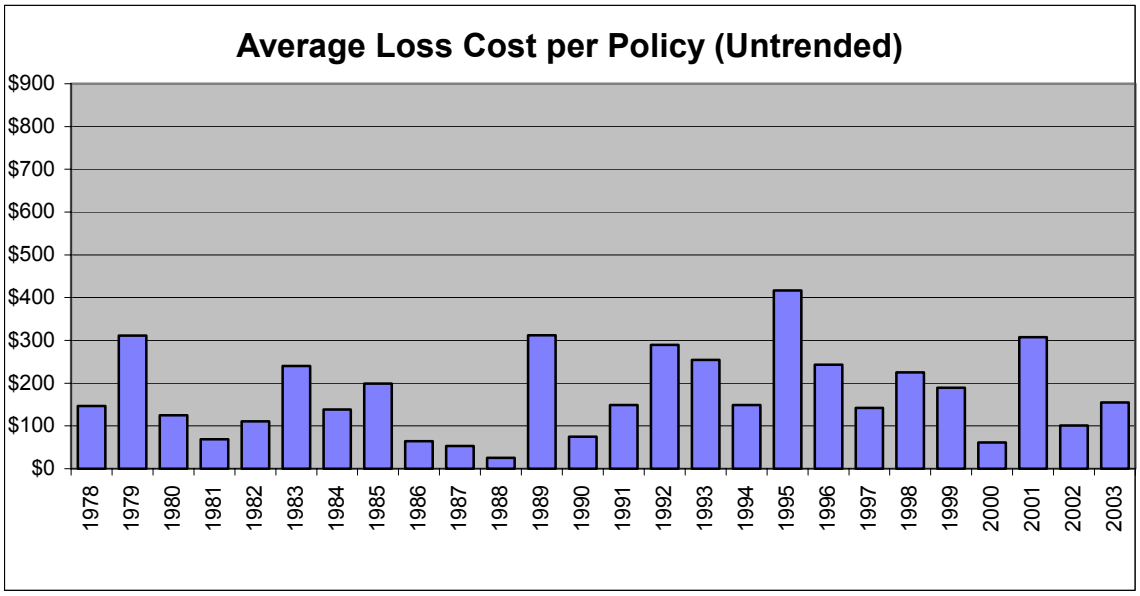
Overall Rate Level Indications

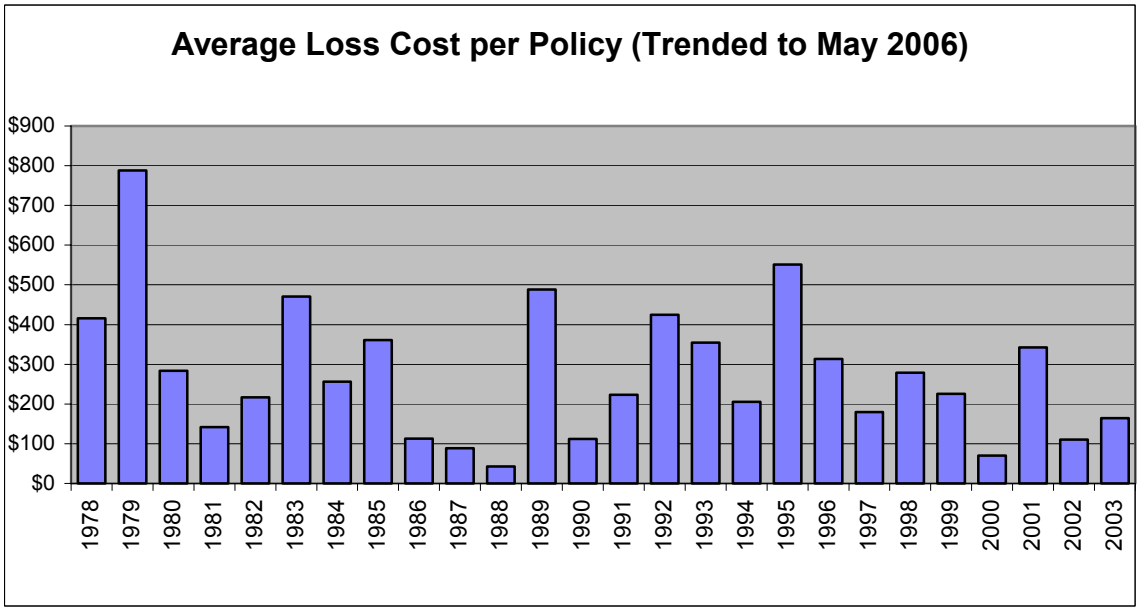
It is important to note that the 1966 HUD report described the "hydrologic method" of ratemaking as a method that "uses available data on the occurrence of floods and damage, but is considerably more sophisticated than merely averaging losses over a period of time." This method of ratemaking, when coupled with special financial arrangements to protect the insurance company pool members against the risk of severe underwriting losses[7], eventually led to the legal requirements for actuarial rates under the National Flood Insurance Act of 1968. This marriage of ratemaking and financial arrangement with private sector insurers was a necessary outcome. While the actuarial formula is the only valid estimate of flood damage over a very long period of time, the annual provision for flood insurance losses and loss adjustment expenses cannot be accurately predicted with any high degree of certainty. In fact, the estimated amount of losses in any future 1-year period is so uncertain that it can be provided for only by having available large loss reserves and replenishing those reserves by accumulating funds during good years to offset the drain on the reserve during bad years. Since the chargeable rates for so many policyholders are less than the actuarial rates by statute[8], the ability to accumulate loss reserves during the good years is impeded. However, the achievement of the goal of collecting sufficient premium to cover at least the historical average loss year now allows for some accumulation of reserves during years with loss volume less than the historical average. In view of the catastrophic loss potential, the current statutory method of providing borrowing authority to finance the long-term loss and loss adjustment

[7]The chance still remained that another severe hurricane like Hurricane Betsy or Camille could have wiped out the private insurers' pledged capital.

[8]By statute, all structures in the SFHA that were built before December 31, 1974, or the effective date of the initial FIRM, whichever is later, are to be charged less than actuarial rates. These policies are referred to as Pre-FIRM Subsidized.

provision of the flood insurance program makes a good deal of sense. Even though the Federal Government became the sole insurer in 1978, the funding mechanism has essentially remained the same. The NFIP experience over the years 1978 through 2003 clearly demonstrates the uncertainty in the average loss and loss adjustment cost per policy. The annual results, untrended and trended to May 2006, are shown in the following two charts.





In lieu of strictly establishing an overall rate level indication based on historical loss ratio data adjusted to current rate levels and further adjusted for trends impacting on loss costs per policy, the rates for the different classifications are developed by the use of the mathematical models described in the Appendix, or by appropriate selection of rates based upon judgment and review of underwriting experience. FEMA has employed mathematical and computer simulation approaches to define average annualized losses and the concurrent catastrophe loss requirements. With these analytical tools, criteria have been developed to measure the prospective underlying pure premium, to project the probabilities of various levels of borrowing needed to meet catastrophe losses for which prefunded loss reserve has not been established, and to estimate capability to repay borrowed funds.

Target Level Premium Analysis

In 1981, FEMA established the goal of becoming self-supporting for loss year levels at least equivalent to the historical average loss year. This was accomplished by 1988. Qualifying the target as the historical average as opposed to the long-term expected annual losses is an important distinction. Because NFIP experience since 1978 does not include any loss years of catastrophic levels for the Program, the historical average is significantly less than that which can be expected over the long term where the influence of extremely large loss years would be felt. The importance of targeting the historical average should not be discounted, however. It is the level around which the great preponderance of loss years will concentrate and allows for the accumulation of reserves in years where losses are less than that level to help fund losses in years where they exceed that level.

The target level premium established by the historical average loss year allows FEMA to assess, as part of each year's rate review, how well the NFIP's self-supporting status is being maintained overall. This "historical average loss year" approach to setting rates accommodates the statutory mandate that premium charges for Pre-FIRM risks, if less than full-risk premiums, must be reasonable. It provides a mathematical basis for determining rates for Pre-FIRM risks, which in the past were determined solely on a political basis, and provides an important framework for making accurate estimates of fiscal soundness. In following through on this approach, the premium charges for the two major categories of business, actuarial and Pre-FIRM subsidized, are developed very differently.

Actuarially rated policies are charged premiums that consider the probabilities of the full range of possible losses, including catastrophic levels. Thus, these premiums are targeted at the true long-term average. Written premiums for actuarial policies will generally be greater than those that would be based on the historical average loss year. This is consistent with the expectation that the long-term average annual losses will be higher than the historical experience to date because of the influence of relatively infrequent but catastrophic loss years.

Subsidized policies are defined as a category of business that does not make an adequate contribution to the loss reserve pool. These risks are charged premiums that are based on political and statutory considerations that override actuarial considerations. The probabilities

of expected and/or catastrophic losses are not contemplated in the rates, which are established for Pre-FIRM construction as rate caps (limitations on chargeable rates) by occupancy type and flood risk zone. FEMA estimates that the premiums for policyholders in this category are between 35% and 40% of what would be charged if the premiums were developed like those charged to the actuarially rated policies.

Use of the premium requirements indicated by the historical average loss year as a target level provides a means by which the NFIP can objectively assess its self-supporting status. Typically, during the rate review, it is first determined whether the actuarial rates need to be adjusted. The effects of any such adjustments on maintaining the overall target level are then projected. Adjustments to policy coverage or premiums for Pre-FIRM risks will likely be proposed to make up any overall shortfall so that, once again, the combination of actuarial and subsidized business can generate written premium at least to the level of the NFIP's self-supporting target. This methodology was particularly pertinent during the years leading up to achieving the self-supporting target and the first few years afterward. It is important to note that the historical average is not a static target. If all factors influencing NFIP experience remained constant but for the addition annually of another year to the experience period, the historical average could be expected to rise as it approaches the true long-term average. Other influences that have specific importance in projecting the target level are related to inflation and the expected types of policies to be written, particularly in regard to those paying full-risk premiums versus those that will be subsidized.

Even without any shortfall in the overall target level, proposals regarding Pre-FIRM subsidized rates and coverage may be made in order to gradually reduce the amount of subsidy. This has been an important consideration in more recent years, as the NFIP has moved toward maintaining written premium at a level somewhat above the level needed to fund the historical average loss year. The level of subsidy provided in the Program has been the subject of much Congressional debate, and the 1994 NFIP reform legislation directed FEMA to study the economic effects of charging actuarially based premium rates for Pre-FIRM structures. PriceWaterhouseCoopers was contracted to conduct this study, and FEMA released the results during FY 2000. Several provisions of the Flood Insurance Reform Act of 2004 seek to reduce the adverse impact of repetitive loss properties on the National Flood Insurance Fund, which, when implemented, will help reduce the average overall subsidy level. The Act doubles the authorized funding for the Flood Mitigation Assistance (FMA) Program and directs that priority for mitigation assistance shall be given to such properties that are in the best interest of the National Flood Insurance Fund.

Rate Review Results

Costs based on the 1978 through 2003 underwriting experience and expected NFIP activities were projected to the 2005-2006 cost levels. Exhibit E shows the premiums required by these projections, the expected average written premiums, and the relationship of the written premium to the historical indicated premiums for flood insurance coverage excluding the premiums for Increased Cost of Compliance coverage.

The written premium based on all rate and rule changes through May 2005 is expected to be 124% of the level needed to fund the historical average loss year.

The rate and rule changes recommended for May 1, 2005, implementation would result in an overall premium increase of 1.4% and include the following major points:

- An increase in the rates of Standard B, C, and X Zones of 6.2%.
- No changes to the rates of Preferred Risk Policies (PRP) in B, C, and X Zones.
- No change to the rates of policies in Pre-FIRM V Zones, Post-'81 Post-FIRM V Zones, and Pre-'81 Post-FIRM V Zones[9].
- An increase in the rates of AE Zones of 2.5%, A Zones of 4.4%, AR Zones of 6.2%, and A99 Zones of 5.9%.
- Various increases in the rates for the Mortgage Portfolio Protection Program (MPPP) policies.

Exhibit A provides, by risk zone category, the average increases in premium projected as a result of the May 2005 rate and rule recommendations.

Federal Policy Fee

The expense of flood insurance studies, floodplain management, and FEMA administrative costs is charged to policyholders through the Federal Policy Fee. Under the RCBAP, the fee varies according to the number of units in the building. Preferred Risk Policies are charged $11 while other non-RCBAP policies are charged a fee of $30. We are not proposing any changes to the Federal Policy Fee. On the basis of recent historical trends, the Federal Policy Fee is expected to produce about $111 million in income in 2005-2006.

Impact of Community Rating System

Policyholders in communities that participate in the Community Rating System (CRS) are eligible for premium discounts based on the creditable activities undertaken by their communities. The impact is considered in the target premium level projections and in their comparison with expected written premium.

The success of CRS—both in terms of number of communities and policyholders and in terms of activities undertaken and losses avoided—has continued to grow. Currently, nearly two-thirds of all NFIP policyholders are in participating CRS communities, with discounts ranging from 5% to 40%.

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[9]"Pre-'81 Post-FIRM V Zones" refers to the class of risks comprised of Post-FIRM construction in the V Zone built between 1975 and 1981. These buildings were built to NFIP standards that accounted for stillwater flood elevations but not the associated wave heights, which were not determinable by the engineering state-of-the-art of the time. In October 1981, the NFIP was able to make use of the latest engineering developments and began to require new construction to be built to more stringent standards.

As a result of CRS communities' improving their risk classes by adopting additional creditable activities, SFHA policyholders in the participating CRS communities should receive an average premium discount of 13% in 2005.

B, C, and X Zones Experience[10]

The NFIP has two types of policies in the X Zone: the Preferred Risk Policy (PRP) and the standard X Zone policy.

Preferred Risk Policies (PRPs)

PRPs are available to structures that are outside of the Special Flood Hazard Area and have not flooded more than once. To assure that these conditions are met, the following two underwriting requirements were implemented in 1998:

- The insured property must be in the X Zone at the time of the policy inception and at each subsequent renewal; hence, no "grandfathering" is allowed.

- The insured property's flood history must meet additional requirements regarding paid insured losses and Federal Disaster Relief payments.

Since those underwriting rules were implemented, the PRP experience has substantially improved, except for 2001, when Tropical Storm Allison stalled over Harris County, Texas. While Allison also produced flooding in Louisiana, Mississippi, and Pennsylvania, most of the PRP losses were attributable to incorrectly mapped X Zones in Houston and the surrounding area. Flood maps have since been updated to more accurately reflect the true flood hazard in those areas.

In addition, significant changes were introduced to the PRP in May 2004. These include expanding eligibility to include Non-Residential and Other Residential policyholders and introducing a contents-only version of the PRP. In addition, the amount of contents coverage provided to existing PRP policyholders was increased to 40% of their selected building coverage.

No additional changes, in either coverage or premiums, are being introduced for May 2005.

X Zone Standard Policies (Non-PRP Policyholders)

For standard X Zone policies, rates are adjusted so the premium level relates to the historical indicated premium level at least in the same way as for actuarially rated AE Zone policies. This has resulted in premium increases for calendar years 1999-2003 that

[10] "B, C, and X Zones" is abbreviated to "X Zone" throughout this section and elsewhere in the document. As mentioned in the Appendix, since 1985 all new FIRMs have shown a reduced number of zones, with one of those being an X Zone. The X Zone encompasses areas formerly shown as Zones B or C.

ranged between 3% and 9%, with a cumulative increase during that time period of 35%. In light of that, no further increase was implemented in 2004. However, X Zone premiums will be increased 6.2% in May 2005 in order to bring the relationship of X Zone premium to historical indicated premium to 139%. This compares to a similar relationship for A Zone policies of 146%.

V Zone Experience

The increased risk of flooding brought about by erosion has been an area of concern for the NFIP. The 1994 NFIP reform legislation directed a study of a series of possible policy changes to address erosion hazards within Federal programs. The Heinz Center for Science, Economics, and the Environment was contracted to perform this analysis, and the study was released in June 2000. The study results demonstrated that the risk of flooding in those areas of V Zones that are susceptible to erosion will dramatically increase (a two- to three-fold increase in the risk in various areas of the country) during the next 30 to 60 years. The NFIP's ratemaking methodology for V Zones has not directly addressed this increased flood risk brought about by erosion. FEMA is currently investigating ways to do so in the flood maps and the flood rates. The Flood Insurance Rate Maps could be refined to delineate erosion zones. However, that will depend upon funding, development of mapping standards, and political acceptance of higher premiums targeted at those subject to the increased flood risk due to erosion.

In order to at least partially address this increasing hazard of flooding as a result of ongoing erosion, the NFIP began a multiyear plan, beginning in May 2001, to increase rates for all V Zone policies. The fourth round of increases, which was part of the May 2004 rate changes, varied between 5% and 8%. For May 2005, we are proposing no change to V Zone rates, but intend to continue to address the erosion hazard through more moderate increases to V Zone rates in the coming years.

Deductibles

In May 2003, higher deductibles were introduced for Non-Residential policyholders and for RCBAP policyholders. As part of the May 1, 2004, rate changes, slight revisions to some of the relativities for those higher deductibles were implemented. Next year's rate changes leave the current deductible relativities unchanged.

Increased Cost of Compliance (ICC) Coverage

The 1994 National Flood Insurance Reform Act (NFIRA) mandated a new coverage to compensate policyholders when they are required to bring their insured structures into compliance with local floodplain ordinances as a result of being substantially damaged by a flood. NFIRA required this new coverage to be actuarially sound, but placed a $75 limit on what any policyholder could be charged. In compliance with these directives, FEMA introduced Increased Cost of Compliance (ICC) coverage in 1996 that provided up to $15,000 of coverage. That amount was subsequently increased, first to $20,000 in 2000,

and then to $30,000 in 2003. These increases in coverage were based on analyses of the expected claim frequency under this coverage.

The Bunning-Bereuter-Blumenauer Flood Insurance Reform Act of 2004 introduces additional refinements to ICC coverage. The most significant is allowing ICC coverage to apply, even when there has not been a recent flood loss, to the non-Federal cost-share requirement of FEMA-funded mitigation projects for individual structures. Implementing that change will require rulemaking, which will not be completed in time to be included with the May 1, 2005, rate changes.

Mortgage Portfolio Protection Program (MPPP)

The Mortgage Portfolio Protection Program (MPPP) was introduced in 1991 as an additional tool to assist the mortgage lending and servicing industries in bringing their mortgage portfolios into compliance with the flood insurance requirements of the Flood Disaster Protection Act of 1973, as amended. Since the lender or servicer issuing the MPPP policy does not have many of the underwriting data available to it, a policy written through the MPPP requires less underwriting data. As a result, FEMA has target MPPP rates at levels that will compensate us for the greater uncertainty in these risks. Effective May 1, 2003, MPPP rates were increased for the first time in several years. In a continuing effort to assure that these rates are in line with those charged to our non-MPPP policyholders, we are again increasing these rates.

Exhibits

The following Exhibits include the information below.

A. Effects of Revisions on Written Premium

B. Insurance Underwriting Experience

C. Calendar/Accident Years 1978-2003 Experience for the Larger Risk Zones

D. Average Expenses per Policyholder

E. Projected Annual Premium Requirements Based on 1978-2003 Loss Experience vs. Projected Written Premium

Exhibit A

NATIONAL FLOOD INSURANCE PROGRAM

Effects of Rate Revision on Average Annual Written Premium (plus FPF)
per Policyholder*
Based on Projected Distribution of Business and
Projected Amounts of Insurance

	Distribution of Business	Average Annual Premium with May 2005 Rates	Increase over Annual Premium with Current Rates
REGULAR PROGRAM - ACTUARIAL RATES			
AE	30.5%	346.24	2.5%
A	1.8%	545.14	4.4%
AO,AH	1.9%	350.19	0.0%
AOB,AHB	7.4%	234.67	0.0%
ZONES AE,A,AO,AH,AOB,AHB	41.5%	335.11	2.2%
POST-81 V,VE	0.7%	1,528.99	0.0%
B,C,X ACTUARIAL	31.4%	319.55	2.7%
(Standard)	11.1%	414.31	6.2%
PRP	20.3%	267.97	0.0%
SUB-TOTAL ACTUARIAL	73.6%	340.20	2.3%
REGULAR PROGRAM - SUBSIDIZED RATES			
PRE-FIRM SUBSIDIZED**	24.3%	724.42	0.1%
(Pre-FIRM V, VE)	0.9%	1,092.27	0.0%
75-81 POST V,VE	0.2%	849.02	0.0%
A99 POST	1.6%	504.73	5.8%
AR	0.2%	534.84	6.2%
EMERGENCY	0.0%	338.25	0.0%
SUB-TOTAL SUBSIDIZED	26.4%	710.02	0.3%
TOTAL	100.0%	437.74	1.4%

*Computations are based on counting and pricing units insured under Condo Master Policies separately.

**The category, PRE-FIRM SUBSIDIZED, includes Pre-FIRM V,VE which was broken out in order to show the premium increase for that subset of policies.

Exhibit A. Effects of Revisions on Written Premium

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM
UNDERWRITING EXPERIENCE BY CALENDAR/ACCIDENT YEAR

EXHIBIT B1

Year	Earned Exposures (Millions)	Average Amount of Insurance per Policy	Earned Premium ($ Millions)	Loss & Allocated Loss Adjustment Expenses ($ Millions)	Average Premium	Average Operating Expense incl. Agts Comm.	Average Loss & ALAE Cost per Policy	Underwriting Profit/ (Deficit) per Policy
2003	4.42	$147,617	$1,700.5	$683.7	$384.39	$141.30	$154.56	$88.53
2002	4.37	$140,771	$1,611.4	$441.6	$368.94	$132.74	$101.09	$135.11
2001	4.29	$132,928	$1,511.5	$1,316.9	$352.62	$133.49	$307.23	($88.10)
2000	4.25	$126,322	$1,416.4	$260.9	$333.33	$124.34	$61.41	$147.58
1999	4.17	$119,569	$1,319.4	$789.2	$316.39	$120.91	$189.24	$6.24
1998	4.09	$115,639	$1,224.8	$921.1	$299.74	$110.46	$225.41	($36.14)
1997	3.80	$108,397	$1,041.3	$540.8	$274.31	$99.49	$142.47	$32.35
1996	3.52	$102,309	$904.9	$858.2	$256.73	$97.75	$243.47	($84.50)
1995	3.20	$99,023	$819.4	$1,332.1	$256.14	$100.48	$416.38	($260.73)
1994	2.85	$96,712	$734.6	$423.5	$258.20	$93.32	$148.85	$16.04
1993	2.67	$94,301	$667.9	$678.4	$250.45	$92.64	$254.39	($96.58)
1992	2.54	$90,400	$626.9	$734.6	$246.90	$91.83	$289.34	($134.26)
1991	2.47	$87,527	$602.2	$367.9	$243.48	$84.65	$148.76	$10.08
1990	2.33	$85,005	$570.4	$174.2	$244.40	$82.40	$74.63	$87.37
1989	2.17	$83,044	$531.3	$677.6	$244.59	$87.40	$311.96	($154.77)
1988	2.10	$80,350	$491.3	$53.5	$234.44	$73.56	$25.55	$135.33
1987	2.07	$76,700	$462.1	$110.2	$222.74	$70.14	$53.09	$99.50
1986	2.03	$71,110	$403.4	$131.5	$198.25	$63.53	$64.60	$70.12
1985	1.92	$66,888	$364.8	$382.4	$189.95	$55.49	$199.08	($64.63)
1984	1.92	$61,862	$334.9	$265.8	$174.68	$48.10	$138.67	($12.08)
1983	1.92	$58,105	$313.0	$460.8	$163.24	$42.07	$240.31	($119.15)
1982	1.89	$55,168	$247.7	$209.4	$130.90	$38.76	$110.68	($18.55)
1981	1.97	$50,883	$181.0	$134.9	$92.00	$31.60	$68.57	($8.17)
1980	1.95	$45,101	$149.2	$244.0	$76.38	$29.51	$124.92	($78.05)
1979	1.62	$37,650	$125.5	$505.8	$77.26	$23.80	$311.40	($257.94)
1978	1.06	$33,150	$81.8	$155.6	$77.20	$26.85	$146.87	($96.52)

Exhibit B1. Key Underwriting Components by Year, 1978-2003

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM
UNDERWRITING EXPERIENCE BY CALENDAR/ACCIDENT YEAR

EXHIBIT B2
PAGE 1
Nov. 30, 2004

		1994	1995	1996	1997	1998
1)	Average Amount of Insurance per Policy	$96,712	$99,023	$102,309	$108,397	$115,639
2)	Earned Premium (A)	$734,616,738	$819,448,282	$904,921,109	$1,041,260,695	$1,224,760,631
3)	Losses Incurred (B)	$410,621,960	$1,293,823,117	$826,803,675	$518,350,709	$872,279,685
4)	Allocated Loss Adjustment Expenses (B)	$12,862,069	$38,291,339	$31,394,168	$22,465,078	$48,777,960
5)	Loss & Loss Adjustment Expense Ratio	0.576	1.626	0.948	0.519	0.752
6A)	Insurance Agent Commission--Direct	$14,723,506	$14,361,100	$14,030,494	$14,472,665	$15,328,404
6B)	Agent Commission Allowance--WYO	$95,469,005	$108,556,142	$121,707,672	$141,716,439	$168,385,690
7A)	General Expense--Direct & Bureau	$30,423,366	$30,123,000	$42,312,000	$39,331,000	$46,326,000
7B)	Operating Allowance (includes ULAE) --WYO	$124,886,332	$168,432,559	$166,518,897	$182,145,234	$221,321,462
8)	Earned Exposure (C)	2,845,126	3,199,258	3,524,840	3,795,920	4,086,074
9)	Average Premium	$258.20	$256.14	$256.73	$274.31	$299.74
10)	Average Operating Other than Agent Commission & Loss Adjustment Expense (D)	$54.59	$62.06	$59.25	$58.35	$65.50
11)	Average Insurance Agents' Commission	$38.73	$38.42	$38.51	$41.15	$44.96
12)	Average Loss & Loss Adjuster Cost per Policy	$148.85	$416.38	$243.47	$142.47	$225.41
13)	Operating Profit/(Deficit) per Policy	$16.04	($260.73)	($84.50)	$32.35	($36.14)

(A) Does not include Federal Policy Fee, nor are the expenses covered by that fee reflected in this exhibit. Also, Group Flood and MPPP premium is excluded.

(B) Includes an allowance for open claims. In addition, Group Flood and MPPP losses are excluded.

(C) This exhibit now counts exposures by policy and by each unit covered by a Residential Condominium Building Association Policy (RCBAP), which replaced Condo Master Policies (CMP's) in 1994.

(D) Operating cost is funded on an ongoing basis (starting in 1981) by the collection of a fixed amount (represented as an expense constant in the determination of premium formula) from each policyholder .

SOURCE: Financial and Statistical Reports prepared by CSC, through its Actuarial Information System.

Exhibit B2. Detailed Underwriting Experience by Year for the Latest 10 Years, Page 1

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM
UNDERWRITING EXPERIENCE BY CALENDAR/ACCIDENT YEAR

EXHIBIT B2
PAGE 2
Nov. 30, 2004

		1999	2000	2001	2002	2003
1)	Average Amount of Insurance per Policy	$119,569	$126,322	$132,928	$140,771	$147,617
2)	Earned Premium (A)	$1,319,441,660	$1,416,380,461	$1,511,487,080	$1,611,438,106	$1,700,454,643
3)	Losses Incurred (B)	$749,401,390	$247,171,015	$1,265,535,011	$420,235,834	$651,823,347
4)	Allocated Loss Adjustment Expenses (ALAE)	$39,777,712	$13,760,609	$51,396,399	$21,315,548	$31,904,784
5)	Loss & ALAE Ratio	0.598	0.184	0.871	0.274	0.402
6A)	Insurance Agent Commission--Direct	$14,988,564	$14,409,800	$14,378,966	$14,101,186	$13,669,763
6B)	Agent Commission Allowance--WYO	$182,927,685	$198,047,270	$212,344,096	$227,614,530	$241,398,434
7A)	General Expense--Direct & Bureau	$74,198,000	$75,472,000	$59,575,000	$46,954,000	$60,912,000
7B)	Operating Allowance (includes ULAE) --WYO	$232,110,498	$240,415,649	$285,899,381	$291,084,683	$309,099,033
8)	Earned Exposure (C)	4,170,322	4,249,238	4,286,469	4,367,746	4,423,829
9)	Average Premium	$316.39	$333.33	$352.62	$368.94	$384.39
10)	Average Operating Other than Agent Commission & Loss Adjustment Expense (D)	$73.45	$74.34	$80.60	$77.39	$83.64
11)	Average Insurance Agents' Commission	$47.46	$50.00	$52.89	$55.34	$57.66
12)	Average Loss & Loss Adjuster Cost per Policy	$189.24	$61.41	$307.23	$101.09	$154.56
13)	Operating Profit/(Deficit) per Policy	$6.24	$147.58	($88.10)	$135.11	$88.53

(A) Does not include Federal Policy Fee, nor are the expenses covered by that fee reflected in this exhibit. Also, Group Flood and MPPP premium is excluded.

(B) Includes an allowance for open claims. In addition, Group Flood and MPPP losses are excluded.

(C) This exhibit now counts exposures by policy and by each unit covered by a Residential Condominium Building Association Policy (RCBAP), which replaced Condo Master Policies (CMP's) in 1994.

(D) Operating cost is funded on an ongoing basis (starting in 1981) by the collection of a fixed amount (represented as an expense constant in the determination of premium formula) from each policyholder .

SOURCE: Financial and Statistical Reports prepared by CSC, through its Actuarial Information System.

Exhibit B2 (cont'd.). Detailed Underwriting Experience by Year for the Latest 10 Years, Page 2

FEDERAL EMERGENCY MANAGEMENT AGENCY

NATIONAL FLOOD INSURANCE PROGRAM
LOSS AND EXPENSE EXHIBIT

EXHIBIT B3
Nov. 30, 2004

1969 - 1973 PART A VOLUNTARY PURCHASE
1974 - 1977 PART A MANDATORY PURCHASE REQUIREMENT
1978 - 2003 PART B MANDATORY PURCHASE REQUIREMENT

	1969-1973	1974-1977	1978-1985	1986-2003	1978-2003	1969-2003
FINANCIAL DATA						
1) Earned Exposure	416,885	2,517,054	14,252,026	57,339,320	71,591,346	74,525,285
2) Earned Premium	$25,048,538	$183,143,214	$1,797,881,733	$16,639,720,262	$18,437,601,995	$18,645,793,747
3) Losses Incurred	$53,575,994	$236,787,191	$2,249,157,887	$10,088,169,181	$12,337,327,068	$12,627,690,253
4) Allocated Loss Adjustment Expense	$4,654,789	$17,492,064	$109,638,797	$407,712,795	$517,351,592	$539,498,445
5) Insurance Agent Commission	$6,818,478	$37,999,048	$283,074,261	$2,495,958,039	$2,779,032,300	$2,823,849,826
6) Direct & Bureau General Expense and WYO Operating Allowance	$10,634,294	$64,436,942	$256,639,638	$3,574,875,483	$3,831,515,122	$3,906,586,358
ANALYSIS OF COSTS						
7) Average Premium per Policy	$60.09	$72.76	$126.15	$290.20	$257.54	$250.19
8) Average Loss & Allocated Loss Adjuster Cost per Exposure Unit	$139.68	$101.02	$165.51	$183.05	$179.56	$176.68
9) Average Insurance Agents Commiss.	$16.36	$15.10	$19.86	$43.53	$38.82	$37.89
10) Average Operating Costs Other Than Agt. Commission & Alloc. Loss Adj. Exp.	$25.51	$25.60	$18.01	$62.35	$53.52	$52.42
11) Operating Profit/(Deficit) per Policy	($121.46)	($68.96)	($77.23)	$1.27	($14.35)	($16.80)
12) Loss Adjuster Expense as a Percentage of Loss	8.7%	7.4%	4.9%	4.0%	4.2%	4.3%
13) Agent Commission as a Percentage of Premium	27.2%	20.7%	15.7%	15.0%	15.1%	15.1%

Exhibit B3. Detailed Underwriting Experience Aggregated by Experience Period

Report: ARPCRPBA
Rundate: Mar 8, 2004

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM
ACTUARIAL INFORMATION SYSTEM

Exhibit B4
Page 1

LOSS AND EXPENSE EXPERIENCE
Accident Period 1978-2003

	VE,V1-V30 Post-FIRM Post 10/81	Unnumbered A Zone Post-FIRM	AE,A1-A30 Post-FIRM & Pre-FIRM Actuarial	B,C,X Standard	B,C,X PRP	AO & AH Post-FIRM	AOB & AHB	Actuarial Totals
1) Earned Exposures	329,854	1,216,068	17,690,860	14,959,499	5,455,482	312,079	3,395,564	43,359,405
2) Average Earned Premiur	$860.11	$299.97	$203.26	$204.23	$213.84	$363.74	$173.23	$211.44
3) Number of Paid Losses	3,679	7,409	101,818	154,359	47,264	978	12,462	327,969
4) Average Loss Payment	$16,324.14	$14,930.36	$15,345.69	$14,939.70	$16,378.12	$18,957.16	$12,967.93	$15,225.41
5) Loss Ratio	0.21	0.30	0.43	0.75	0.66	0.16	0.27	0.54
6) Loss Frequency per 100 Policy Contracts	1.7	0.6	0.7	1.2	0.9	0.3	0.5	0.9
7) Average Loss Cost per Policy Holder	$182.07	$90.96	$88.32	$154.15	$141.89	$59.41	$47.59	$115.16
8) Other Expenses (Average per Policyholder)								
a) Servicing Facility/WYO Operating Allowance	$95.38	$55.62	$48.76	$48.83	$61.45	$60.15	$46.63	$50.84
b) Agent Commission	$129.02	$45.00	$30.49	$30.64	$32.08	$54.56	$25.98	$31.72
c) Loss Adjuster	$8.49	$4.17	$3.88	$5.99	$6.95	$2.49	$2.47	$4.92
d) Total	$232.88	$104.79	$83.13	$85.45	$100.48	$117.19	$75.08	$87.47
9) Operating Surplus/(Deficit)* per Policyholder on Paid Basis	$445.15	$104.22	$31.81	($35.37)	($28.54)	$187.13	$50.56	$8.80
10) Total Operating Surplus/(Deficit)	$146,835,605	$126,737,538	$562,800,948	($529,133,962)	($155,686,825)	$58,400,327	$171,670,791	$381,624,422

* The operating surplus is the policyholder contribution in periods of relatively better loss experience towards reserves used to fund high loss years.

Exhibit B4. Detailed Underwriting Experience by Zone and by Actuarial vs. Subsidized, 1978-2003, Page 1

Report: ARPCRPBA
Rundate: Mar 8, 2004

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM
ACTUARIAL INFORMATION SYSTEM

Exhibit B4
Page 2

LOSS AND EXPENSE EXPERIENCE
Accident Period 1978-2003

	VE,V1-V30 Pre-FIRM	VE,V1-V30 Post-FIRM Pre 10/81	A Zone Pre-FIRM	AE,A1-A30 Pre-FIRM	AO & AH Pre-FIRM	Emergency Program	Subsidized Totals	Program Totals
1) Earned Exposures	1,222,336	228,451	4,103,464	15,330,839	1,225,256	3,202,074	25,312,419	71,542,233
2) Average Earned Premiur	$422.45	$364.12	$322.40	$378.91	$384.69	$112.21	$338.26	$257.54
3) Number of Paid Losses	26,234	3,284	74,191	319,879	6,189	104,802	534,579	895,136
4) Average Loss Payment	$16,912.63	$19,854.29	$13,949.84	$15,035.25	$12,149.76	$5,698.53	$13,142.51	$13,782.63
5) Loss Ratio	0.85	0.78	0.77	0.82	0.16	1.65	0.82	0.66
6) Loss Frequency per 100 Policy Contracts	2.5	2.1	1.8	2.2	0.5	3.3	2.2	1.4
7) Average Loss Cost per Policy Holder	$362.98	$285.41	$252.21	$313.71	$61.37	$186.51	$277.56	$172.45
8) Other Expenses (Average per Policyholder)								
a) Servicing Facility/WYO Operating Allowance	$64.31	$60.17	$57.21	$61.22	$61.63	$42.29	$58.34	$53.52
b) Agent Commission	$63.37	$54.62	$48.36	$56.84	$57.70	$16.83	$50.74	$38.63
c) Loss Adjuster	$13.37	$10.27	$10.30	$12.49	$3.14	$10.57	$11.46	$7.23
d) Total	$141.05	$125.06	$115.87	$130.55	$122.47	$69.69	$120.54	$99.38
9) Operating Surplus/(Deficit)* per Policyholder on Paid Basis	($81.58)	($46.35)	($45.68)	($65.35)	$200.85	($143.99)	($59.84)	($14.29)
10) Total Operating Surplus/(Deficit)	($99,720,846)	($10,589,324)	($187,460,211)	($1,001,813,347)	$246,090,115	($461,079,496)	($1,514,573,109)	($1,022,360,336)

* The operating surplus is the policyholder contribution in periods of relatively better loss experience towards reserves used to fund high loss years.

Exhibit B4 (cont'd.). Detailed Underwriting Experience by Zone and by Actuarial vs. Subsidized, 1978-2003, Page 2

Report: ARPCRPBA
Rundate: Mar 8, 2004

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM
ACTUARIAL INFORMATION SYSTEM

Exhibit B5
Page 1

LOSS AND EXPENSE EXPERIENCE
Accident Period 1986-2003

	VE,V1-V30 Post-FIRM Post 10/81	Unnumbered A Zone Post-FIRM	AE,A1-A30 Post-FIRM & Pre-FIRM Actuaria	B,C,X Standard	B,C,X PRP	AO & AH Post-FIRM	AOB & AHB	Actuarial Totals
1) Earned Exposures	322,568	1,057,265	16,104,876	10,847,883	5,455,482	305,852	3,357,126	37,451,054
2) Average Earned Premium	$864.21	$315.50	$213.44	$242.89	$213.84	$366.53	$173.88	$228.22
3) Number of Paid Losses	3,466	6,469	88,978	94,305	47,264	964	12,388	253,834
4) Average Loss Payment	$16,900.90	$15,896.10	$16,313.57	$19,621.26	$16,378.12	$19,114.79	$12,987.05	$17,400.14
5) Loss Ratio	0.21	0.30	0.42	0.69	0.66	0.16	0.27	0.52
6) Loss Frequency per 100 Policy Contracts	1.6	0.6	0.7	1.1	0.9	0.3	0.5	0.8
7) Average Loss Cost per Policy Holder	$181.60	$97.26	$90.13	$170.58	$141.89	$60.25	$47.92	$117.93
8) Other Expenses (Average per Policyholder)								
a) Servicing Facility/WYO Operating Allowance	$106.31	$63.78	$55.87	$58.15	$61.45	$67.73	$52.80	$57.82
b) Agent Commission	$129.63	$47.32	$32.02	$36.43	$32.08	$54.98	$26.08	$34.23
c) Loss Adjuster	$8.42	$4.41	$3.97	$6.27	$6.95	$2.52	$2.50	$4.98
d) Total	$244.36	$115.52	$91.86	$100.86	$100.48	$125.23	$81.38	$97.04
9) Operating Surplus/(Deficit)* per Policyholder on Paid Basis	$438.25	$102.72	$31.45	($28.54)	($28.54)	$181.04	$44.57	$13.25
10) Total Operating Surplus/(Deficit)	$141,366,701	$108,601,129	$506,537,854	($309,608,359)	($155,686,825)	$55,372,566	$149,636,574	$496,219,639

* The operating surplus is the policyholder contribution in periods of relatively better loss experience towards reserves used to fund high loss years.

Exhibit B5. Detailed Underwriting Experience by Zone and by Actuarial vs. Subsidized, 1986-2003, Page 1

Report: ARPCRPBA
Rundate Mar 8, 2004

FEDERAL EMERGENCY MANAGEMENT AGENCY
NATIONAL FLOOD INSURANCE PROGRAM
ACTUARIAL INFORMATION SYSTEM

Exhibit B5
Page 2

LOSS AND EXPENSE EXPERIENCE
Accident Period 1986-2003

	VE,V1-V30 Pre-FIRM	VE,V1-V30 Post-FIRM Pre 10/81	A Zone Pre-FIRM	AE,A1-A30 Pre-FIRM	AO & AH Pre-FIRM	Emergency Program	Subsidized Totals	Program Totals
1) Earned Exposures	827,941	175,535	3,248,816	12,355,154	1,115,005	200,584	17,923,036	57,291,795
2) Average Earned Premiu	$527.11	$396.53	$366.42	$432.32	$406.56	$207.81	$420.29	$290.20
3) Number of Paid Losses	17,000	2,242	53,784	229,914	5,303	4,064	312,307	579,482
4) Average Loss Payment	$21,373.53	$24,588.38	$16,009.23	$17,854.39	$12,926.14	$10,279.89	$17,594.28	$17,408.94
5) Loss Ratio	0.82	0.78	0.71	0.76	0.15	0.99	0.73	0.60
6) Loss Frequency per 100 Policy Contracts	2.6	2.2	1.7	2.0	0.5	2.1	1.9	1.2
7) Average Loss Cost per Policy Holder	$438.86	$314.05	$265.03	$332.25	$61.48	$208.28	$306.58	$176.08
8) Other Expenses (Average per Policyholder)								
a) Servicing Facility/WYO Operating Allowance	$80.18	$70.06	$67.73	$72.83	$70.84	$55.43	$71.90	$62.35
b) Agent Commission	$79.07	$59.48	$54.96	$64.85	$60.98	$31.17	$63.04	$43.53
c) Loss Adjuster	$15.29	$10.56	$10.67	$12.94	$3.16	$8.52	$11.96	$7.12
d) Total	$174.53	$140.10	$133.36	$150.62	$134.99	$95.13	$146.90	$112.99
9) Operating Surplus/(Deficit)* per Policyholder on Paid Basis	($86.28)	($57.62)	($31.97)	($50.55)	$210.10	($95.60)	($33.19)	$1.12
10) Total Operating Surplus/(Deficit)	($71,437,363)	($10,114,107)	($103,872,180)	($624,526,607)	$234,263,396	($19,175,065)	($594,861,926)	$64,245,014

* The operating surplus is the policyholder contribution in periods of relatively better loss experience towards reserves used to fund high loss years.

Exhibit B5 (cont'd.). Detailed Underwriting Experience by Zone and by Actuarial vs. Subsidized, 1986-2003, Page 2

Analysis of Pure Premium per Policyholder EXHIBIT C

Based on Consolidated Claims/Policy Data (Excluding ICC), Accident Years 1978-2003

Program Type / Zone	Earned Exposure (M)	Earned Premium ($M)	Losses Paid ($M)	Allocated Loss Adjustment Expense ($M)	Loss & Loss Adj Exp Inc'd on 5/1/2006 Cost Level ($M)	Number of Paid Losses	Pure Premium on 5/1/2006 Cost Level ($M)
Post-FIRM -- Subject to Actuarial Rate Schedules							
AE, A01-A30							
+ Elevated	8.24	1,405.1	542.5	24.9	748.0	37,579	90.77
0 Elevated	2.48	734.5	216.7	8.8	295.4	12,359	119.03
- Elevated	0.54	287.6	107.6	5.4	145.3	6,834	267.86
Subtotal	11.26	2,427.1	866.8	39.1	1,188.7	56,772	105.53
A	1.22	362.3	109.8	5.0	150.5	7,422	123.76
AO and AH	0.31	112.5	18.4	0.8	23.2	978	74.47
AOB and AHB	2.40	431.2	104.5	5.7	135.9	8,781	56.69
Post-'81 VE, V01-V30							
+ Elevated	0.24	173.4	47.8	2.1	67.8	2,920	276.85
0 Elevated	0.04	43.6	5.7	0.3	8.4	317	234.80
- Elevated	0.05	63.9	5.9	0.4	8.7	433	180.30
Subtotal	0.33	280.8	59.4	2.8	84.9	3,670	258.15
B, C, X							
Standard	4.01	972.7	507.5	17.8	697.2	22,711	173.76
Preferred Risk (PRP)	2.58	565.8	254.2	12.0	312.2	14,310	121.04
Subtotal	6.59	1,538.4	761.7	29.8	1,009.4	37,021	153.13
All Zones Combined	***22.19***	***5,179.3***	***1,928.4***	***83.5***	***2,604.2***	***115,060***	***117.39***
Pre-FIRM -- Electing Actuarial Rate Schedules							
AOB and AHB	1.00	148.1	55.5	2.6	72.9	3,681	73.00
AE, A01-A30							
+ Elevated	4.96	734.5	446.8	19.2	636.1	30,544	128.15
0 Elevated	1.46	403.7	233.9	9.6	320.1	14,502	218.90
Subtotal	6.43	1,138.2	680.7	28.8	956.2	45,046	148.80
B, C, X							
Standard	10.95	2,070.9	1,776.6	70.8	2,807.6	131,648	256.47
Preferred Risk (PRP)	2.88	575.6	510.8	25.4	635.3	32,954	220.88
Subtotal	13.82	2,646.5	2,287.4	96.2	3,442.9	164,602	249.07
All Zones Combined	***21.25***	***3,932.9***	***3,023.6***	***127.6***	***4,472.0***	***213,329***	***210.47***
Post-FIRM -- Electing Subsidized Rate Schedules							
A99	0.27	76.5	4.0	0.2	5.5	358	20.51
Pre-'81 VE, V01-V30							
+ Elevated	0.17	53.7	50.7	1.8	79.4	2,592	474.86
0 Elevated	0.04	12.7	7.6	0.2	11.3	304	265.31
- Elevated	0.02	15.7	6.3	0.3	9.9	368	562.72
Subtotal	0.23	82.1	64.5	2.3	100.5	3,264	442.53
All Zones Combined	***0.51***	***165.3***	***68.7***	***2.5***	***106.6***	***3,653***	***207.63***
Pre-FIRM -- Electing Subsidized Rate Schedules							
A	5.23	1,471.7	1,216.9	50.3	1,892.9	95,769	361.62
AE, A01-A30	15.33	5,519.7	4,763.7	189.4	7,041.9	319,879	459.33
All Other A Zones	2.31	737.1	91.6	5.1	138.3	9,342	59.77
V, VE	1.22	505.7	439.5	16.2	683.1	26,234	558.83
Other (Pre- & Post-FIRM)	0.34	89.4	97.6	3.7	155.7	7,284	459.40
All Zones Combined	***24.44***	***8,323.5***	***6,609.3***	***264.7***	***9,911.9***	***458,508***	***405.56***
TOTAL	**68.39**	**17,601.0**	**11,630.1**	**478.3**	**17,094.7**	**790,550**	**249.97**
Emergency Program	3.21	359.7	592.2	33.5	1,410.9	104,820	440.19
Group Flood (GFIP)	0.17	12.0	25.5	1.4	31.6	3,648	190.45
Mortgage Portfolio (MPPP)	0.05	36.9	4.2	0.2	5.3	319	99.02
GRAND TOTAL	**71.81**	**18,009.6**	**12,252.0**	**513.4**	**18,542.5**	**899,337**	**258.21**

Exhibit C. Calendar/Accident Years 1978-2003 Experience for the Larger Risk Zones

EXHIBIT D

Average Charge per Policyholder Needed
to Fund NFIP Servicing & Statistical Agent Contractors,
Administration of CRS, WYO Company Operating Allowance,
Marketing, and Miscellaneous Expenses

Number of Policyholders for Contracts Written during 2005/2006	4.60 million	
1) NFIP Servicing & Statistical Agent Contracts, CRS Administration, Marketing, Miscellaneous	$11.96	
Agent Commission on Above Premium	$2.11	
		$14.07
2) WYO Company Operating Allowance	$64.42	
Agent Commission on Above Premium	$11.37	
		$75.79
Total	$89.86	

Exhibit D. Average Expenses per Policyholder

EXHIBIT E

Average Annual Premium Required per Policyholder
for Historical Average Loss Year (w/o ICC)
vs.
Projected Premium Written with May 2005 Rates

Based on 2005/2006 Cost Levels

	Distribution of Business	Average Annual Premium Indicated by Historical Average Loss Levels and Projected Expenses	Projected Average Annual Written Premium* with May 2005 Rates (excluding ICC)	Projected Premium Expressed as Percentage of Historical Indicated Premium**
REGULAR PROGRAM - ACTUARIAL RATES				
AE ACTUARIAL	30.5%	234.16	342.16	146.1%
A ACTUARIAL	1.8%	249.16	539.21	216.4%
AO,AH ACTUARIAL	1.9%	186.91	345.42	184.8%
AOB,AHB	7.4%	171.47	230.29	134.3%
ZONES AE,A,AO,AH,AOB,AHB	41.5%	221.48	330.87	149.4%
POST-81 V,VE ACTUARIAL	0.7%	419.84	1514.55	360.7%
B,C,X ACTUARIAL	31.4%	306.74	317.62	103.5%
(Standard)	11.1%	294.77	410.66	139.3%
PRP	20.3%	289.98	266.97	92.1%
SUB-TOTAL ACTUARIAL	73.6%	259.75	336.85	129.7%
REGULAR PROGRAM - SUBSIDIZED RATES				
PRE-FIRM SUBSIDIZED***	24.3%	590.79	663.78	112.4%
(Pre-FIRM V, VE)	0.9%	638.22	1045.83	163.9%
75-81 POST V,VE	0.2%	531.70	834.26	156.9%
A99 PRE + POST	1.6%	126.81	499.27	393.7%
AR	0.2%	127.58	529.51	415.0%
EMERGENCY	0.0%	671.69	338.25	50.4%
SUB-TOTAL SUBSIDIZED	26.4%	557.49	653.58	117.2%
TOTAL	100.0%	338.27	420.38	124.3%

*All computations are based on counting and pricing condominium units insured under Condo Master Policies separately. Projected Annual Written Premium has $50 Expense Constant and $30 Federal Policy Fee ($11 for PRP's) for individual policies, and prorates the schedule of charges for CMP's to the units covered. Historical Indicated Premium includes the equivalent of $26.24 Federal Policy Fee on all non-PRP policy/units and a $11.00 Federal Policy Fee on PRP's.

** Based on 1978 - 2003 experience. Does not include consideration for development of catastrophic loss reserve. NFIP simulation modeling indicates that, because the 1978 - 2003 period does not include the large scale catastrophic year, the losses experienced in this time period will prove to be lower than the long-term average including catastrophic years.

***The category PRE-FIRM SUBSIDIZED includes Pre-FIRM V,VE which was broken out to show that subset of policies.

Exhibit E. Projected Annual Premium Requirements Based on 1978-2003 Loss Experience vs. Projected Written Premium

APPENDIX

Actuarial Rate Formula

Actuarial Rate Formula

Actuarial rates are applied in the rating of Post-FIRM construction and additional layer limits of insurance on all construction. This Appendix provides an overview of the actuarial rate formula that is utilized in developing these rates.

The actuarial rates are based on consideration of the risk involved and accepted actuarial principles. The actuarial rate formula may be expressed as follows:

$$RATE = \left[\sum_{i=Min}^{Max} \left(PELV_i \times DELV_i \right) \right] \times \frac{LADJ \times DED \times UINS}{EXLOSS}$$

Where: *Min* = minimum elevation relative to lowest floor at which flood damage occurs.

Max = elevation relative to lowest floor at which flood damage approaches a maximum.

The variable *PELV* is the probability of a particular water surface elevation relative to the 100-year Base Flood Elevation (BFE). For example, in Zone A10, the probability of water's rising to or above an elevation 1 foot less than the 100-year flood elevation is 1.6%, and 1 foot or more above the 100-year flood elevation is 0.6%, whereas the probability of water's rising to or above BFE is 1%. There are many risk zones, and they are based on information gathered and calculations made by engineers and hydrologists. Various Federal agencies, such as the U.S. Army Corps of Engineers, and private engineering firms are performing detailed risk zone and elevation studies of all major flood-prone areas. The flood risk zones are determined from these detailed studies and *PELV* values are assigned to these zones. The results of these studies are published on a Flood Insurance Rate Map (FIRM) showing zones and, where appropriate, BFEs.

The assignment of *PELV* values must be accomplished in such a way as to keep the rating of policies as simple as possible and still distinguish expected average cost differences among the rate zones. There are 30 numbered A Zones for which different sets of *PELV* values may be assigned. However, there are three main technical reasons for combining risk zones for rating purposes[1]:

- Lowest Floor Elevations are measured to the nearest foot.
- Due to the difficulty in estimating the extremely rare flood, the base frequency curves are truncated at about the 350- to 500-year event.
- The BFEs are approximations based on the best available data about the major sources of flood.

[1] Some of the factors that increase flood hazard (e.g., local urban drainage problems and urbanization of other parts of the watershed) are virtually impossible to quantify if the Flood Insurance Study process is to remain cost effective.

As a practical approach, in 1982 five risk zone combinations were established reflecting 1.0 foot elevations, and a minimum elevation difference of 1.5 feet between the maximum flood level and the BFE was established for the risk zones that had the lowest flood hazard factors. Considering the relative variance in flood levels that can occur because of conditions that affect a particular building site during an actual flood, even more averaging for insurance rating is reasonable for buildings constructed with a Lowest Floor Elevation of –1.0 foot or above, relative to the BFE (the elevation of a flood with an exceedance probability of 1%). In 1983, the transition to a single rate schedule was approved. This approach has provided the NFIP with the means for simplifying FIRMs.

Since 1985, all new FIRMs have shown at most ten zones. These are A, AE, V, VE, AH, AO, AR, A99, X, and D. Zone AE includes all zones formerly designated as A1-A30, and Zone VE includes all those formerly designated as V1-V30. Zone X encompasses areas formerly shown as Zones B or C.

To assure consideration of the maximum flood level that might damage a building located in a Special Flood Hazard Area (even though elevated to the BFE or higher) and to recognize a minimum price associated with the risk transfer, the use of a minimum insurance rate has been continued. This is virtually mandated when adverse selection and the uncertainty of risk elevation are factors as important as they are in flood insurance. The minimum rate is $.16 per $100 of basic limits building coverage.

The need to establish minimum values also can be found in the manner that the Flood Insurance Study process treats hydrologic uncertainties. The accepted methods used in the studies tend to underestimate the calculated flood frequencies when there is little or no recorded flood data. Generally, recorded data relating to flooding events exceeding the 100-year event are sparse. The number of years of recorded flood data rarely exceeds a 30-year period. Even in those instances where longer records exist, changes in floodplain characteristics partly invalidate the usefulness of the data. It is generally accepted that the uncertainties involved in calculating the 500-year flood level are significant. Statistical analysis of these calculations has been published in the American Society of Engineers *Proceedings*. It has been projected that complete reliance on the traditional flood frequency tables in the calculation of insurance rates would produce only about one-half the insurance premium required to meet the insured risk.

The variable *DELV* is the ratio of the flood damage to the value of the insurable property and is obtained from depth percent damage tables. These tables are subject to experience checks by FIMA from a review of actual flood insurance claim files. The *DELV* values are calculated by weighting the actual insurance claims experience and the previously established depth percent damage values. The weighting is accomplished by using standard actuarial techniques (credibility).

The variable *LADJ* is the loss adjustment expense factor expressed as a percentage of losses (claim payments to policyholders). This provides funds for the payment of loss adjusters' fees and special claims investigation costs that are required to determine the appropriate insurance value of the flood damage and the amount due the policyholder under the terms

and conditions of the flood insurance policy. The value of *LADJ* is currently projected to be 4.2% under the adjuster fee schedule that was implemented on May 1, 1997.

The variable *DED* is the deductible offset. This variable is required to reflect the insurance policy condition that the first $500 of damage does not qualify for an indemnification payment. The factor *DED* is based on size of claim data produced from insurance claim files.

The variable *UINS* is the under-insurance factor and is included in the formula because flood insurance policyholders do not always insure to value. This requires that the impact of the *DELV* values in the formula be adjusted to account for the difference between property values and the amount of insurance purchased within basic and additional coverage limits for each category of risk. The value of *UINS* is determined by a review of insurance claims data.

The variable *EXLOSS* is the expected loss ratio and serves to load the actuarial rates for insurance agents' commissions and other acquisition expenses incurred in the selling of flood insurance policies and a small contingency loading. The contingency loading is 5% in nonvelocity zones and 10% in velocity zones.